

BEST AVAILABLE COPY**REMARKS****RECEIVED
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Reconsideration of this application, as amended, is respectfully requested.

Claims 23 and 25-34 remain pending. Claims 23 and 25-34 have been rejected. Claim 24 is allowed.

Claims 23 and 33 have been amended. No claims have been cancelled. No claims have been added. Support for the amendments is found in the specification, the drawings, and in the claims as originally filed. Applicant submits that the amendments do not add new matter. Applicants note with appreciation the Examiner's allowance of claim 24.

Rejections Under 35 U.S.C. § 103

Claims 23, 25, 26, 27, 28, 29, 30, 31, 32 and 33-34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,903,058 to Akram ("Akram"), in combination with U.S. Patent No. 6,130,170 to David et al. ("David") and U.S. Patent No. 4,455,199 to Enomoto ("Enomoto").

Applicants have amended claim 23 to include a copper layer disposed above and on the metal adhesion first layer; and a metal third layer that includes nickel-vanadium disposed above and on the copper layer.

Akram discloses a chrome-copper alloy layer 70 deposited above the metal layer comprising chrome 68, and the copper layer 72 deposited on the chrome-copper alloy (col. 6, lines 4-18, Figure 2e).

Thus, Akram merely discloses the chrome-copper alloy layer between the metal layer and the copper layer. In contrast, amended claim 23 refers to a copper layer deposited between the metal adhesion layer and a layer that includes nickel-vanadium.

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David discloses nickel-vanadium or chromium-copper alloy layer deposited between the first metal layer and the copper layer, and similarly to Akram, fails to disclose a copper layer deposited between the metal adhesion layer and a layer that includes nickel-vanadium.

Enomoto discloses manufacturing timepiece components, and similarly to David and Akram, fails to disclose a copper layer deposited between the metal adhesion layer and a layer that includes nickel-vanadium, as recited in amended claim 23.

It is respectfully submitted that Akram does not teach or suggest a combination with Enomoto and David, David does not teach or suggest a combination with Akram and Enomoto, and Enomoto does not teach or suggest a combination with Akram and David. Akram teaches polishing away UBM metallurgy layers from the surface of the substrate to form discrete UBM structures in the vias. David, in contrast, teaches an etchant solution to etch TiW films. Enomoto, in contrast to David and Akram, teaches the manufacturing of a timepiece display. It would be impermissible hindsight, based on Applicants' own disclosure, to combine Akram, David, and Enomoto.

Furthermore, even if Akram, David, and Enomoto were combined, such a combination would lack the following limitations of amended claim 23: a copper layer disposed above and on the metal adhesion first layer; and a metal third layer that includes nickel-vanadium disposed above and on the copper layer.

Therefore, Applicants respectfully submit that amended claim 23 is not obvious over Akram, in view of David, and further in view of Enomoto.

Because claims 25-32 depend from claim 23, and add additional limitations, Applicants respectfully submit that amended claims 25-32 are not obvious over Akram, in view of David, and further in view of Enomoto.

Amended claim 33 includes a copper layer disposed above and on the metal adhesion first layer, and a copper stud disposed above and on the copper layer.

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As set forth above, neither Akram, David, Enomoto, nor a combination thereof, discloses the discussed limitations.

Therefore, Applicants respectfully submit that amended claim 33 and its dependent claim 34 are not obvious over Akram, in view of David, and further in view of Enomoto.

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Conclusion

It is respectfully submitted that in view of the amendments and arguments set forth herein, the applicable rejections and objections have been overcome. If there are any additional charges, please charge Deposit Account No. 02-2666 for any fee deficiency that may be due.

Respectfully submitted,

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Date: August 22, 2006

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